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AMSAT NEWS SERVICE
ANS-234
The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to:
ans-editor at amsat.org.

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SB SAT @ AMSAT $ANS-234.01
ANS-234 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 234.01
 >From AMSAT HQ KENSINGTON, MD.
DATE August 21, 2016
To All RADIO AMATEURS
BID: $ANS-234.01

Call for 2016 AMSAT Space Symposium Papers

The 2016 AMSAT-NA Annual Meeting and Space Symposium will be held on the weekend of November 10- 14, 2016. Proposals for papers, symposium presentations, and poster presentations are invited on any topic of interest
to the amateur satellite community. We request a tentative title of your presentation as soon as possible, but no later than September 15th. The final copy must be submitted by October 15th for inclusion in the printed proceedings. Abstracts and papers should be sent to Dan Schultz at n8fgv(a)amsat.org

The 2016 AMSAT Space Symposium and Annual Meeting will be held aboard the cruise ship Carnival Liberty departing from the port of Galveston,Texas on November 10, 2016 and returning to port on November 14, 2016.

[ANS thanks 2016 AMSAT Space Symposium Committee for the above information]

AMSAT-NA Board of Directors Ballots Due by September 15th

Ballots have been mailed to AMSAT-NA members in good standing, and must be returned to the AMSAT-NA office by September 15, 2016 in order to be counted. Those sent outside North America were sent by air mail. If you have not received your ballot package in a reasonable time for your QTH, please contact the AMSAT-NA office. Your completed ballot should be sent as promptly as possible, and those from outside North American preferably by air mail or other expedited means.

This year there are five candidates:

Tom Clark, K3IO
Clayton Coleman, W5PFG
Mark Hammond, N8MH
Bruce Paige, KK5DO
Paul Stoetzer, N8HM

The three candidates receiving the highest number of votes will be seated as voting Board Members with two year terms. The two candidates receiving the next highest number of votes will be non-voting Alternate Board Members with terms of one year. Please vote for no more than three candidates.

Please take the time to review the candidate statements that accompany the ballot and determine who you wish to see on the Board. Election of Board members is both an obligation as well as an opportunity by our membership to help shape the future direction of AMSAT-NA.

[ANS thanks AMSAT-NA for the above information]

Happy 20th Birthday to FO-29!

Happy 20th Birthday to Fuji-OSCAR 29! FO-29, known as JAS-2 (Japan Amateur Satellite #2) prior to launch, was built by the Japan Amateur Radio League and launched on August 17, 1996 from Tanegashima Space Center on an H-II launch vehicle into a 1,323 km x 800 km orbit with an inclination of 98.5 degrees. In addition to a 100 kHz wide analog Mode V/u (JA) transponder, the satellite also includes a packet BBS and digitalker. While the packet BBS and digitalker are non-functional, the analog transponder continues to provide excellent service to the present day.

With an apogee of 1,323 km, FO-29 provides satellite operators with excellent
DX opportunities every few months when the passes over a certain area are at
or near apogee. Intercontinental QSOs are regularly reported, including between Japan and Alaska as well as North America and Europe. Although the theoretical maximum range at apogee is 7,502 km, the excellent sensitivity

of the transponder as well as it’s strong and solid 1 watt downlink signal allows that distance to be stretched when the conditions are suitable. The longest distance QSO made via FO-29’s analog transponder occurred on August 27, 2015 with an unscheduled 7,599.959 km contact between KG5CCI in Arkansas and F4CQA in France.

The sensitivity of the transponder and Mode V/U configuration also allow for the effective use of minimal equipment. QSOs have been reported using a single Yaesu FT-817 transceiver and the stock rubber duck antenna. Taking advantage of the large footprint and ease of use, the K1N DXpedition to Navassa Island made a total of 29 QSOs during two passes of FO-29 on February 12, 2015 using a single Yaesu FT-817 along with an Arrow antenna, activating that extremely rare DX entity on satellite for the first time since 1978. To this day, FO-29 remains the most widely used linear transponder
satellite and an ideal satellite for beginners looking to become active on the linear transponder satellites to try first. The FO-29 control station maintains a blog (in Japanese) at
http://blog.goo.ne.jp/fo-29
The JARL also offers an award for confirmed QSOs with ten different stations
via FO-29.

http://www.amsat.org/?p=5417

[ANS thanks AMSAT-NA and Paul, N8HM for the above information]

2016 AMSAT Space Symposium Registration Reminder

- Booking your Carnival Cruise does not register you for the AMSAT Symposium. There is a charge for each Symposium attendee of $40. This fee applies to those who will attend the technical presentations only and includes a copy of the printed Proceedings. Additional guests are entitled to attend all other events. The registration form is available from the AMSAT office or store website. Online Symposium registration:

http://store.amsat.org/catalog/product_info.php?products_id=130

- Ground transportation options have been added to the FAQ page on the AMSAT Symposium web page. Carnival offers round-trip transportation from HOU airport to the cruise terminal at approximately $74 per person, IAH airport $94 per person. If you are traveling to the Board of Directors meeting, you may still utilize the Carnival transportation option for your return to the airport from the cruise terminal. However, you will need to obtain other transportation between the airport and the Galveston DoubleTree hotel.

Cruise information may be found at:
http://www.amsat.org/?page_id=3667

[ANS thanks 2016 AMSAT Space Symposium Committee for the above information]

Amateur Radio BIRDS CubeSat Constellation

The BIRDS constellation, planned to deploy from the ISS in 2017, will consist
of four 1U CubeSats (BIRD-B, BIRD-J, BIRD-G and BIRD-M). They are made of the
exactly same design including the radio frequencies to be used and will be
deployed together.

The main mission of the constellation is to do experiments on radio
communication with a CubeSat constellation via a network of UHF/VHF amateur
radio ground stations all over the world.

The challenge is to distinguish each satellite from the four satellites
transmitting with the same frequency, hand over operation of a satellite from
one ground station to another and assemble the satellite data, such as
housekeeping telemetry, music and the Earth images, obtained at different
ground stations.

Amateur radio enthusiasts are asked to join the network to assist in the data
downlink and reconstruction of the patchy satellite data into one meaningful
data. Orbit information and operational plan of each satellite will be made
available to the amateur radio community in the world. Software to decode the
satellite data will be also made available.

The respective amateur ground stations that can successfully decode the
telemetry data, music and the Earth images, shall receive a QSL card from the
BIRDS team. The data reconstructed by the effort of the amateur ground station
network will be made public to share the sense of satisfaction and
achievement.

A particularly interesting mission of BIRDS project is the SNG mission that
exchanges music via a digi-singer. It is an outreach-oriented mission. First,
music in MIDI format is uploaded from ground. Then the MIDI file is processed
on-board using a vocal synthesizer. Finally, the processed music is sent back
to Earth using UHF antenna as voice FM data.

During organized events on space utilization with schools or general public,
music could be heard using a common hand-held receiver and hand-made Yagi
antenna positioned to track the satellite at each given pass over the region.
This has a tremendous effect on awareness of radio communication among school
children and general public, especially in the countries participating in the
BIRDS project, Japan, Ghana, Mongolia, Nigeria and Bangladesh.

Proposing to use CW, 1k2 AFSK FM, audio FM and 9k6 GMSK downlinks. Planning a
JAXA sponsored deployment from the ISS during 2017.

BIRDS project information:
http://birds.ele.kyutech.ac.jp/
http://birds.ele.kyutech.ac.jp/amateur.html
http://birds.ele.kyutech.ac.jp/newsletter.html
https://www.facebook.com/Joint-Global-Multi-Nation-Birds-BIRDS-project-

171403156542445/

Download the Paper – IAA-CU-15-01-16 Five-nations CubeSat constellation; An inexpensive test case for learning and capacity building

https://www.researchgate.net/publication/289868265_IAA-CU-15-01-16_Five-nations_CubeSat_constellation_An_inexpensive_test_case_for_learning_and_capaci-_ty_building

The IARU Satellite Frequency Coordination pages are hosted by AMSAT-UK at http://www.amsat.org.uk/iaru/

[ANS thanks AMSAT-UK for the above information]

RadFxSat-2 (Fox-1E) Launch Scheduled for December 2017

AMSAT has been informed that the launch for the NASA Educational Launch of Nanosatellites (ELaNa) XX mission carrying RadFxSat-2 (Fox-1E) has been scheduled for December 2017.

In addition to RadFxSat-2, the ELaNa XX mission will carry 12 CubeSats constructed both by NASA and several universities around the United States. The mission will be launched by Virgin Galactic on their LauncherOne air launch to orbit system from Mojave, CA

RadFxSat-2, like RadFxSat (Fox-1B), is a partnership opportunity between the Vanderbilt University Institute for Space and Defense Electronics and AMSAT and will carry a similar radiation effects experiment, studying new FinFET technology.

RadFxSat-2 will be the fifth Fox-1 satellite built by AMSAT. Fox-1A, now AMSAT-OSCAR 85 (AO-85), was launched on October 8, 2015 and is fully operational, providing science data from it's onboard experiments and FM transponder service for the amateur radio community. Fox-1Cliff and Fox-1D are scheduled for launch this fall and RadFxSat is scheduled to launch in early 2017.

The RadFxSat-2 spacecraft bus will be built on the Fox-1 series but will feature a linear transponder “upgrade” to replace the standard FM transponder in Fox-1A through D. In addition, the uplink and downlink bands will be reversed from the previous Fox satellites in a Mode V/u (J) configuration using a 2 meter uplink and 70 cm downlink. The downlink will feature a 1200 bps BPSK telemetry channel to carry the Vanderbilt science data in addition to a 30 kHz wide transponder for amateur radio use.

[ANS thanks AMSAT-NA and Paul, N8HM for the above information]

Graham Shirville G3VZV to be next BATC President

The British Amateur Television Club (BATC) has announced that Graham Shirville, G3VZV, has been chosen to be the organization's next President. He
first joined BATC in the early 1970's, where he supported the development of the network of ATV repeaters in the UK for many years.

More recently he has been closely involved with the development of the HamTV system on the ISS and with the schools contacts with Tim Peake during his Principia Mission.

Graham has also been a driving force behind AMSAT-UK's FUNcube satellite projects and was briefly shown working on the FUNcube-1 satellite in the RSGB
Youth video Amateur Radio – a 21st Century Hobby.

He provided the deployment mechanism for the Slow Scan Television (SSTV) satellite ARISSat-1/KEDR which was released from the International Space Station by cosmonauts Sergei Volkov RU3DIS and Alexander Samokutyaev.

British Amateur Television Club
http://www.batc.org.uk/

https://amsat-uk.org/2016/08/19/graham-shirville-g3vzv-batc-president/

[ANS thanks AMSAT-UK for the above information]

AMSAT Events

Information about AMSAT activities at other important events around the country. Examples of these events are radio club meetings where AMSAT Area Coordinators give presentations, demonstrations of working amateur satellites, and hamfests with an AMSAT presence (a table with AMSAT literature and merchandise, sometimes also with presentations, forums, and/or demonstrations).

*Saturday, 3 September 2016 - Shelby Hamfest in Shelby, NC (ARRL North Carolina State Convention) - AMSAT Forum Only

*Saturday and Sunday, 10-11 September 2016 Boxboro Hamfest in Boxborough, MA (ARRL New England Division Convention)

*Friday, 23 September 2016 – presentation at Jet Propulsion Laboratory Amateur Radio Club in Pasadena CA

*Friday and Saturday, 21-22 October 2016 – CopaFest 2016, south of Maricopa AZ

*Saturday, 12 November 2016 – Oro Valley Amateur Radio Club Hamfest in Marana AZ

*Saturday, 3 December 2016 – Superstition Superfest in Mesa AZ

*Saturday, 14 January 2017 – Thunderbird Hamfest 2017 in Phoenix AZ

*Saturday, 4 February 2017 – Palm Springs Hamfest in Palm Springs CA

*Friday-Sunday, 10-12 February 2017 Orlando HamCation in Orlando, FL

*Friday and Saturday, 17-18 February 2017 – Yuma Hamfest in Yuma AZ

[ANS thanks AMSAT-NA for the above information]

ARISS News

Successful Contacts

* Daisen Elementary School, Saihaku-gun, Japan, direct via 8J4DISS
The ISS callsign was scheduled to be NA1SS
The scheduled astronaut was Takuya Onishi KF5LKS
Contact was successful: Sat 2016-08-20 08:50:19 UTC 42 deg
Signal was very clear and strong.
13 students prepared 26 questions. They got 15 answers.
News papers : 4
TV : 5
Audience: 210

Video:
https://www.youtube.com/watch?v=HHcoPW5Ex-I

Oyama Elementary School is near the Oyama National Park in Tottori
Prefecture. It is a small elementary school with a population of 76.
This school contact will involve 13 students in the sixth grade
(ages 11 and 12), who will interview astronaut Onishi.

* Kopernik Observatory & Science Center, Vestal NY, direct via K2ZRO
The ISS callsign was scheduled to be NA1SS
The scheduled astronaut was Jeff Williams KD5TVQ
Contact was successful: Thu 2016-08-18 16:24:42 UTC 29 deg

* A telebridge contact via IS1SLD with students attending Space Camp at
the
U.S. Space & Rocket Center, Huntsville AL, USA, was successful Thu
2016-08-11
14:48:24 UTC 83 deg.

* A direct contact via OK2KET with the OK2KJT Radioclub, Valasska Polanka,
Czech Republic, was successful Wed 2016-08-10 18:56:17 UTC 90 deg.

Upcoming Contacts

* The Children's Museum of Indianapolis, Indianapolis IN, direct via N9DR
The ISS callsign is presently scheduled to be NA1SS
The scheduled astronaut is Kate Rubins KG5FYJ
Contact is a go for: Tue 2016-08-23 15:09:15 UTC 42 deg

Founded in 1925, the Children’s Museum of Indianapolis creates immersive,
interdisciplinary experiences that promote inquiry-based family learning
across the arts, sciences, and humanities. The museum is a 473,000 square
foot, five-level facility that houses 11 permanent exhibit galleries, two

traveling exhibit spaces, a children’s theater, a planetarium, a public library, a preschool, and a collection of more than 115,000 artifacts and objects. Most recently, the Children’s Museum opened Beyond Spaceship Earth,
and immersive exhibit focused on human space travel. Beyond Spaceship Earth
features three components: a recreation of portions of the inside of the International Space Station (ISS); a one-of-a-kind, immersive space object experience called the Schaefer Planetarium & Space Object Theater; and an Astronaut Wall of Fame, which will pay tribute to more than 30 astronauts with ties to Indiana.

Hosting more than one million visitors each year, the museum has received numerous accolades, including being named one of the top 3 science centers in the country by Family Fun magazine. The museum has been ranked as the number one children’s museum by Forbes.com. Through a variety of free and discounted admission programs for under-served populations, as well as its community outreach efforts targeting local neighborhood residents and urban public schools, the Museum ensures that its visitor population is diverse.

Watch
http://www.ariss.org/upcoming-contacts.html
for information about upcoming contacts as they are scheduled.

[ANS thanks ARISS, Dave, AA4KN, and Charlie, AJ9N for the above information]

Satellite Shorts From All Over

International Lighthouse/Lightship Weekend - Satellite operation

On the AMSAT-BB, Ken, GW1FKY reports:
With reference to the question about satellite operation for this years "International Lighthouse /Lightship "
events (ILL) dates Saturday 20 th and Sunday 21st august 2016.
Over here in Wales (United Kingdom) the " Barry Amateur Radio Society " will be operating from a twin pair of lighthouses located at "NASH POINT" situated on the coast of the Bristol Channel - South Wales.
We will be limited to operation during approx. 0700 -1600 hrs GMT only I regret to say.

" In addition to operating on the HF and VHF bands I also plan to set up my portable satellite equipment for operation and contacts during suitable passes"

Callsign /Lighthouse and details as follows
GC6BRC - Lighthouse (High) Ref: UK0071:
GC4BRS - Lighthouse (Low) Ref: UK0072

Locator Ref: IO81FJ
QSL Manager : MW0DHF (Philip King)
Weather is not looking to good - hopefully it will not deter our plans for operation.

[ANS thanks Ken, GW1FKY and AMSAT-UK for the above information]

YX0V DXpedition to Aves Island to Include Satellite Operations

The YX0V DXpedition to Aves Island, scheduled for August 31, 2016 – September 10, 2016, will include satellite operations. Aves Island, a dependency of Venezuela located west of Dominica and Guadeloupe in the Caribbean Sea (grid FK85eq), is currently the 17th most wanted DXCC entity on the Club Log DXCC Most-Wanted List and was last on the air in 2007. It was active on satellite during the YV0D expedition in 2004, but only three QSOs were made before the DXpedition was cut short due to rain.

Satellite plans are yet to be finalized. YX0V information can be found on their website at
http://yx0v.com/,
on Twitter at
https://twitter.com/yx0v2016,
and on Facebook at
https://www.facebook.com/groups/yx0v2016/

[ANS thanks Paul, N8HM for the above information]

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In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status. Contact Martha at the AMSAT Office for additional student membership information.

73,
This week's ANS Editor,
Joe Spier, K6WAO
k6wao at amsat dot org